

BEFORE THE GUAM PUBLIC UTILITIES COMMISSION



IN THE MATTER OF:) GPA Docket 23-17
)
LIQUIFIED NATURAL GAS (LNG))
) ALJ REPORT
)
)
_____)

INTRODUCTION

This matter comes before the Guam Public Utilities Commission ["PUC"] upon the Petition of the Guam Power Authority ["GPA"] for review and approval by the Guam Public Utilities Commission ["PUC"] of GPA's Engineering, Procurement, and Construction Management (EPCM), Phase I, Liquified Natural Gas (LNG) Pre-Development Study.¹ The scope of the proposed LNG Study, to be conducted by Stanley Consultants, includes four Phases. The total cost for the four phases, over a period of four years seven months, is projected to be \$4,184,000.²

At the present time, GPA seeks approval for Phase I, "Pre-Development" at an estimated cost of \$1,809,000.³

BACKGROUND

GPA has already decided that it intends to proceed with the implementation of an extensive LNG infrastructure and to fully proceed ahead with its "plan to procure and

¹ GPA Petition for Review and Approval of the EPCM, Phase I, Liquified Natural Gas (LNG) Pre-Development Study (hereafter "GPA Petition"), GPA Docket 23-17, dated May 29, 2023.

² GPA Petition, Ex A-006.

³ Id.

utilize natural gas at the Ukudu Plant...".⁴ The description of "Phase I", as attached to GPA's Petition, indicates that the purpose of Phase I is to determine the mechanics and procedures for implementing the LNG infrastructure, not to consider whether the project should be implemented. Some of the issues involve where to obtain the LNG supply and the cost thereof; gas storage on Guam (cryogenic storage); the construction of a regasification plant in Guam; construction of a terminal for distribution of the LNG, the process for distribution from a fuel platform/delivery terminal and possibly a floating storage and regassification unit (FSRU).⁵

In the scope, GPA indicates that Phase I, which will take 12 months, includes the following: preliminary conceptual site selection, and LNG receiving terminal, LNG storage, and regasification facility functional design; business model analysis and selection; industry outreach; environmental, cultural and construction permit survey; **Project Execution Plan** and Work Breakdown Structure Development; Regulatory support for PUC; and Regulatory and stake holder outreach support.⁶

GPA apparently believes that the implementation of the LNG infrastructure project is a "done deal." That GPA has already decided to proceed with the implementation and construction of the LNG Infrastructure project is indicated by Phase II, which is "LNG Infrastructure Procurement." GPA is already intending to utilize its consultant in Phase II to complete the procurement and selection process of those contractors that will implement the LNG infrastructure and supply the LNG: "proponent outreach", Bidder pre-qualification process, preparation of draft bidding documents, LNG Infrastructure

⁴ GPA Petition, at p. 1.

⁵ In the Matter of: GPA Integrated Resource Plan, GPA Docket 13-02, IRP Implementation strategy Decisions, filed November 27, 2013.

⁶ GPA Petition at Ex A-005.

contract negotiations, fuel contract and procurement for fuel supply, and awarding of contracts.⁷

Phase III involves “**LNG Infrastructure Implementation**”, including engineering support during construction phase, project management, post-construction, and regulatory outreach.⁸

To date, the PUC has not approved the costly and complex LNG infrastructure plan that GPA is now proposing.

ANALYSIS

1. **The PUC should delay consideration of this Petition until it retains a Consultant to review the Petition and receives advice from the Consultant concerning the appropriate process for consideration of the LNG Infrastructure Project.**

The LNG Infrastructure may be the most complex, and potentially the most expensive, project that the PUC has reviewed in its history. GPA began consideration of this project in 2012 and attempted to have the PUC adopt implementation of the LNG infrastructure in 2014 (which the PUC rejected). While there has been some minor consideration of LNG related issues since that time, now, nearly nine years later, GPA is requesting approval of a path that will lead to full implementation of the LNG infrastructure. The ALJ submitted information requests to GPA, and GPA responded to those requests. There is now an extensive record to review.⁹ The ALJ has done his best to review the GPA response in a very short

⁷ Id.

⁸ Id.

⁹ The PUC Requests for Information dated June 9, 2023, and GPA’s Response dated June 20, 2023, are included in the Commissioners packets. If the Commissioners wish to review the documents provided by GPA, they can request that the PUC Administrator assist them in receiving the drobox files from GPA.

period, but the Commission would benefit from a detailed review of the record by a consultant.

Previously Lummus Consultants had assisted the PUC with LNG issues in 2013-2014. The successor of Lummus is Daymark Concentric Advisors, which is a current consultant of PUC. The ALJ proposes that the PUC retain Daymark to advise it regarding the LNG infrastructure project and authorize it to retain a sub-consultant with LNG experience if necessary. In this matter GPA has its main consultant, Stanley, and at least three major sub-consultants. The PUC needs the assistance of a consultant to advise it concerning the complexities and costs of the LNG project. After the PUC receives such advice, it can decide how to proceed with consideration of this matter.

GPA has claimed that delay of consideration by the PUC will increase the project costs. There was no substantiating evidence provided to support this claim. It also now appears that typhoon damage to the storage tanks at the Ukudu power plant may delay completion for one year.¹⁰ Even if there is “delay”, that cannot prevent the PUC from doing its due diligence on this project and taking whatever time it needs to properly review the project. The Contract Review Protocol requires that the PUC review all costs associated with the LNG infrastructure project.

2. The PUC has never approved the implementation and construction of the LNG infrastructure project.

¹⁰ The Guam Daily Post, June 1, 2023, at p. 1, “Typhoon damage might delay Ukudu power plant competition”.

In November 2011, GPA had R.W. Beck prepare an LNG study.¹¹ In 2013, in GPA 13-02, the PUC considered GPA's "INTEGRATED RESOURCE PLAN." R.W. Beck noted that the LNG regasification terminal was "a complex project" and that there were significant project risks, including project development and execution, long-term commodity contract risk, the problem of coordination of conversion of existing power plants, project performance risks, and GPA financial and regulatory risk.¹² At that time R.W. Beck estimated a significant initial capital investment including for the LNG regasification facility and "an additional \$300 million investment..."¹³

The PUC Order in said docket is attached hereto as Exhibit "1". It noted numerous concerns regarding the LNG plan, but most significantly, the following:

"GPA's IRP does not provide detailed information concerning how the required infrastructure changes and other costs associated with a conversion to LNG will be funded, or what the rate impact of such a plan will be upon ratepayers. **The PUC cannot give unqualified approval to a plan without fully understanding how the plan will be funded and how it will impact ratepayers.**"¹⁴ (emphasis added).

On November 27, 2013, GPA did file a "Response to PUC Order Re Resource Allocation Implementation Plan" and "IRP Implementation Strategy Decisions."¹⁵

The response addressed many non-LNG issues regarding the overall Integrated Resource Plan, and some issues regarding the decision-making process regarding how GPA would determine whether to embark on an LNG infrastructure project. Several valid issues were raised, including whether GPA should even use LNG. One consideration was whether to "bundle" LNG services such as LNG Supply, gas

¹¹ R.W. Beck, an SAIC Company, LNG Study, dated November 2011.

¹² Id. at pgs. 13-1 through 13-7.

¹³ Id. at pg. 13-6.

¹⁴ PUC Order, GPA Docket 13-02, dated July 20, 2013, at p. 2.

¹⁵ Response to PUC Order Re Resource Allocation Implementation Plan" and "IRP Implementation Strategy Decisions", GPA Docket 13-02, dated November 27, 2023.

storage, regassification, and gas distribution, etc. GPA considered disadvantages of “bundling”:

“A single supplier with control of fuel supply, distribution, and storage as well of a significant amount of the generation supply would have tremendous leverage on Guam Power Authority. Contracting would need to be incredibly stringent and detailed to ensure the correct safeguards are in place.”¹⁶

GPA was undecided as to whether it wanted to participate in obtaining additional revenues associated with other uses of natural gas both locally and interisland:

“GPA customers will pay for virtually all the infrastructure capable of supporting ancillary markets.”¹⁷ **In fact, GPA was not even decided as to whether it should use LNG at all:** “There are several alternatives when considering the switching from oil-based fuels to LNG. This decision entails whether GPA should: ...proceed with LNG or continue with the current oil-based fuels for baseload generation...”¹⁸

The LNG “structure” had not been decided upon. Options were “merchant services”, “tolling structure with GPA Alternative”, “FSRU Charter Party Structure”, “Multi-User Structure.”¹⁹ The GPA “Response to PUC Order” did not provide LNG proposed cost and savings information, or information on rate impact.

To date, GPA has not provided a clear presentation to the PUC as to why the LNG infrastructure project should proceed ahead or be implemented. No “cost benefit” analysis has been provided which would determine whether the alleged benefits of LNG and an extensive LNG infrastructure are supported by the cost. LNG is argued to be advantageous for the Ukudu plant, but will other plants utilize LNG? If LNG is

¹⁶ Id. at p. 25.

¹⁷ Id. at p. 36.

¹⁸ Id. at p. 39.

¹⁹ Id. at p. 45.

primarily to be supplied to Ukudu, is the massive cost of the LNG infrastructure justified? Guam may possibly be too small a market to justify the LNG option.

GPA has not even required that Stanley consider the option of not implementing LNG in the Phase I study. GPA has already decided that it will proceed with the LNG terminal option or other “technically viable options for importing gas.”²⁰

In June of 2014, the Guam Consolidated Commission on Utilities approved “program management services” for “the Resource Implementation Plan and Execution Plan for LNG.”²¹ It sought an additional \$1M for R.W. Armstrong, the “Program Management” contractor. The PUC denied the CCU attempt to proceed with the implementation and execution plan for LNG.²² A review of the materials in GPA Docket 14-02 on the PUC website indicate that PUC essentially shut down the program management office of GPA and refused to fund additional expenses for LNG consultant related contracts.

On October 27, 2016, in GPA Docket 15-05, the PUC considered GPA’s request for approval of the procurement of the new generation combined cycle units. While approving a combined cycle plant of up to 180MW, the PUC established its position on LNG: **“any plan for proceeding ahead with LNG at the present time is disapproved. GPA has not demonstrated that such plan is economically viable.”** (emphasis added).²³

²⁰ See Response to Request for Information No. 9.

²¹ PUC Order, GPA Docket 14-02, dated July 31, 2014, at p. 2.

²² Id. at p.4.

²³ PUC Order, GPA Docket 15-05, dated October 27, 2016, at p. 9.

That statement continues to be the policy of the PUC. GPA has not demonstrated that the LNG plan is economically viable. Up to the present, PUC has never revoked its overall disapproval of the LNG infrastructure plan. It has, however, made exceptions to the policy. Subsequently in GPA Docket 15-05, the PUC indicated that GPA, in procurements for new generation, could entertain and consider LNG proposals that provided efficient, reliable and least- cost baseload capacity.²⁴

On August 30, 2018, in GPA Docket 18-02, the PUC indicated that “the power plant must be capable of dual firing for ultra-low sulfur diesel (ULSD) or natural gas...”.²⁵ This was in accordance with the GPA plant specifications. Had the PUC not provided for a second pipeline, any possibility of the use of natural gas would have been foreclosed. Except for these two limited exceptions, the PUC has never changed its policy of disapproval of the LNG infrastructure plan, nor has it ever authorized the extensive LNG infrastructure development that GPA now appears to be proposing through its four phase “study” with Stanley Consultants.

In GPA Docket 23-02, on November 4, 2022, the PUC approved a contract between GPA and Stanley Consultants, Inc. The PUC authorized GPA to enter into a Engineering Procurement and Construction Management contract with Stanley “for engineering and technical consulting services related to the commissioning of the new Ukudu Power Plant for a total cost of \$6,241,727.00.”²⁶ At that time, the PUC only approved funding for services related to the commission of the new Ukudu power plant. The contract included the possibility of services rendered concerning “LNG Pre-Development”, but no funding was provided for such work.

²⁴ Supplemental Order, GPA Docket 15-05, April 27, 2017, at p. 2.

²⁵ PUC Order, GPA Docket 18-02, dated August 30, 2018, at p. 2.

²⁶ PUC Order, GPA Docket 23-02, dated November 29, 2022, at p. 6.

In this docket, GPA now asks for funding in the amount of \$1,809,000 for matters including site selection for the LNG receiving terminal, LNG storage, and regasification facility design, as well as the “project execution plan.” Approval by the PUC of this “study” will place Guam “down the road” to building an LNG infrastructure project. Such proposal for a major LNG funding expenditure is subject to review and approval by the PUC under GPA’s contract review protocol.²⁷

3. **To date, GPA has not provided an analysis to the PUC concerning the cost of the LNG project, its impact on ratepayers, or a cost-benefit analysis demonstrating the benefits to Guam.**

In Request for Information No. 10, the ALJ asked GPA “what is the estimated cost for implementation of the LNG project and infrastructure project?” GPA has not provided a satisfactory answer. It states that the project will be implemented on a BOT (build/operate/transfer) basis, and that “a private company (gas supplier) will pay the CAPEX and OPEX of the LNG project.” Of course, the ratepayers of Guam will obviously pay the cost of building and operating the LNG infrastructure through the fuel cost for LNG, as well as the fixed capacity and variable capacity charges that GPA will pay. GPA recognizes that the gas price it pays “will be the basis for the gas supplier to recover the cost of the LNG project.” The PUC must be apprised of at least an estimated cost for the project before it approves this contract.

Before the PUC proceeds with this project, it should be provided with cost data as to the overall cost and benefit, if any, to the ratepayers of Guam. GPA previously provided cost estimates to the PUC. In GPA Docket 14-02, PUC Consultant Lummus (Report dated December 25, 2013) indicated that, in the GPA 2012 Integrated Resource Plan, GPA stated that it could invest in the order of \$650M to

²⁷ GPA’s Contract Review Protocol, Administrative Docket 00-04, (Feb. 15, 2008).

transition most of its generation units to LNG and achieve a present value savings over 30 years of approximately \$900M (PUC never accepted GPA's pricing assumptions for LNG/RFO or that GPA could obtain GCC pricing. PUC Legal Counsel estimated that GPA would be expending nearly \$900M at that time to save \$900M). That cost data is now ten years old. The PUC needs current cost data.

Why can't GPA provide similar figures now as to the cost and savings of this LNG infrastructure project? GPA further states that it would determine the costs for the LNG infrastructure in Phase I of its study. The ALJ believes that, before the PUC approves this path to development and construction of the infrastructure project, there should be an advance understanding of what the costs are and the benefits to the ratepayers. GPA claims that, based on its consultant experience, that "switching from diesel fuel to LNG is **expected** to be economically justified". What is this claim based upon?

Presently the PUC has no evidence before it which demonstrates that there will in fact be a monetary benefit in switching to LNG. GPA has not presented any explicit statement as to the cost of the LNG infrastructure project, other than citing an "experience for a Caribbean Island" that may not be similar to Guam's situation.

The PUC is in a poor position to evaluate the LNG infrastructure project without more than hypothesis and conjecture. PUC does not presently know the ratepayer impact of this project. Going back to GPA Docket 13-02 in 2013, Lummus Consultants asked GPA to provide the rate impact of the LNG infrastructure plan upon ratepayers. To date, nothing has been provided to PUC on rate impact. At this point, GPA has also not provided information as to the availability and delivered pricing of LNG to Guam. As Lummus stated "the most important issue

for justifying a “go forward” decision is the sourcing and pricing of LNG delivered to Guam.”²⁸

4. Approval of the Stanley Consultants contract and plan for the LNG implementation project will impose significant costs upon the ratepayers.

There are now two Stanley Consultant Contracts-the first is the EPCM contract for the Ukudu plant. The second is the new contract for the proposed implementation and construction of the LNG infrastructure. There is already a record of contract costs that have been paid to Stanley Consultants as EPCM for the Ukudu plant. Costs for that contract have steadily increased over the years. If the LNG contract for four phases is approved, it can be anticipated that there will be additional substantial costs imposed upon ratepayers over the next twenty-five years.

From March 2017 to February 2022, the cost for the EPCM contract with Stanley Consultants (relative to the Ukudu plant) was roughly \$6M, an annual cost of \$1.2M.²⁹ In GPA Docket 23-02, the PUC approved additional funding for the Stanley Consultants EPCM of \$6,241,727.00 for FY2023-FY2025. For the eight-year period, the cost is well over \$12M. The average cost per year is over \$1.5M.

In 2016 GPA had indicated that the proposed EPCM contract was “a onetime expense”, and the total cost would \$750,000 to be funded from the 2014 Bond funds.”³⁰ The PUC has previously raised the concern that Stanley Consultants may be viewed by GPA as having a role for the entire duration of the 25-year contract

²⁸ PUC Order, GPA Docket 13-02, dated July 20, 2013, at p. 3.

²⁹ PUC Order, GPA Docket 21-01, dated October 29, 2020, at p. 3.

³⁰ PUC Order, GPA Docket 18-09, dated March 29, 2018, at p. 3.

with KEPCO for the new power plant. There will be many millions more in expenses for this contract.³¹

A similar analysis is applicable to the contract for Stanley Consultants regarding LNG. For the next four years and two months, GPA will pay \$4,184,000 for the Stanley Consultants work on LNG, roughly \$1M per year.³² Similarly, this contract may extend over the entire 25-year life of the LNG contract with an IPP. The PUC should be cautious about imposing millions of dollars in costs upon ratepayers without solid data and information to establish that the expenditure is justified under a cost-benefit analysis.

The ALJ has other prudence concerns about the proposed LNG “study” project with Stanley. GPA has requested that a 20% contingency be added to the \$1,809,000. That contingency is not needed, as GPA can avail itself of the allowable 20% cost increase under the Contract Review Protocol if necessary.

One aspect of the proposed Phase I tasks is “PUC Regulatory Support”: “The Stanley Project Team will provide GPA with support in obtaining the PUC approval of the LNG project during the phases of Project implementation.”³³ In GPA Docket 18-09, PUC disapproved an expenditure for Stanley to “develop a plan for obtaining CCU and PUC approval.” Such tasks and expenditure should be disallowed.

There are potential conflict concerns concerning this contract. Stanley Consultants and its subconsultants are the parties that will be paid under the contract for

³¹ Id. at p. 4.

³² Attached collectively as Exhibit “2” are the hourly contract rates, the expected number of contract hours, and the Fee Breakdown.

³³ GPA Petition, EX A-007 (Approach and Scope of Work).

processing the implementation and construction of the LNG infrastructure. They are also the same parties that will evaluate and recommend whether the LNG project should be undertaken. Stanley and the subconsultants have a financial interest in having the LNG project approved and the LNG infrastructure built.

The PUC should consider the possibility that the study should be conducted by its consultant or an independent third party. In any event, the PUC must hire its own consultant. That consultant should advise PUC as to whether it should conduct the study, or whether GPA/PUC should hire an independent consultant to conduct this study.

5. **Although GPA is not presently requesting funding approval of Phases II through IV of the project, the phases are all part of an inter-connected plan to implement the LNG infrastructure. There are numerous concerns about these Phases that are not resolved by the GPA responses to the Requests for Information.**

Phase I is not a process for justifying the necessity for LNG infrastructure and its costs, but one for determining how the infrastructure will be implemented. The Phase II LNG Infrastructure Procurement is already viewed by GPA as the process by which the LNG infrastructure project will be implemented. The focus is not on whether the project should be implemented, but upon how it will be implemented. In Phase II, GPA intends to proceed with bidder qualification, issuance of bidding documents, LNG infrastructure contract negotiations for fuel contract and procurement for fuel supply, and the actual awarding of contracts.³⁴

The same concern is applicable to proposed Phase III, LNG Infrastructure Implementation. In this Phase, GPA intends to provide engineering support for

³⁴ GPA Petition, EX A-017 (Approach and Scope of Work).

design and construction; project management; and post construction and commissioning support.³⁵

There are several concerns about the proposed Phase IV of this project. GPA envisions that the party it contracts to provide LNG infrastructure would “agree for GPA to take an “equity stake” in the projects after the initial commissioning of the new facilities.” GPA indicates that it would be “the sole off-taker for all services and fuel supply provided by and at these facilities”, which would seem to create a monopoly. The LNG infrastructure “cannot be pledged for any non-GPA direct business steams.” Uses of the LNG facilities by the infrastructure contractor for bunkering, regional LNG or CNG supply, and local Guam would be subject to “a negotiated franchise fee.”

In addition, GPA would become an active LNG seller in the market: an option of “GPA selling LNG or gas ex-terminal to third parties who could then distribute to end users; GPA allowing third parties to use the LNG terminal to import LNG and charging these third parties a fee for using the terminal (equivalent to a franchise fee).” GPA would become a participant in the private local fuel market and would potentially attempt to convince other fuel suppliers to switch to LNG. GPA would become a competitor to existing fuel suppliers.

GPA’s responses do not answer the issues raised in the PUC Requests for Information. It alleges that GPA already has an “equity stake” as it will own the

³⁵ GPA Petition, EX A-022 (Approach and Scope of Work).

LNG facility after the contract expires. This is not what GPA proposes in Phase IV: it states that GPA will take an “equity stake” **after the initial commissioning of the new facilities.**” The proposal appears to create a “monopoly” in GPA as it is the **“sole off-taker for all services and fuel supply provided by and at these facilities”.** GPA then is attempting to control the regional market through trans-shipment and **“GPA selling LNG or gas ex-terminal to third parties who could then distribute to end users.”**

The provision of LNG to the Ukudu plant is conceivably within the purview and authority of GPA, subject to PUC approval. 12 GCA sec. 8104 (k) empowers GPA to control, operate, improve, equip, maintain, repair, renew, replace, reconstruct, alter and insure **the electric system ...**” But the claimed additional powers, such as transshipment to other islands, entry into the fuel market as a private competitor, the sales of LNG to other third-party purchasers, and monopolistic control as sole off-taker for all services and fuel supply, are not necessarily within the power of GPA to control and operate Guam’s electric power system.

GPA is acting like a private business in attempting to capitalize on a “negotiated franchise fee” for bunkering, and regional transshipment of LNG. GPA claims that customers should benefit since they are paying for ownership of the LNG facility. However, what is to ensure that GPA’s profits from the sale and transshipment of LNG will work to the benefit of GPA customers/ratepayers?

Phase IV provides that GPA will be **selling LNG or gas ex-terminal to third parties.**

How can GPA claim that it would not be an active LNG seller in the market? If the LNG Facility IPP would be the “seller”, why does GPA state in Phase IV that it would be selling LNG or gas to third parties? GPA also admits that “other fuel suppliers” are likely potentially interested in purchasing LNG supply from GPA. GPA will be competing with other fuel suppliers and trying to change customers from use of ULSD to LNG.

GPA has not made a convincing argument that selling fuel to third parties or transshipping fuels to other islands is within its powers under 12 GCA 8104(b) or (k). It states that it is authorized to use and hold its real or personal property and carrying out its other powers in the law. Nothing authorizes GPA to engage in private commercial business selling and transshipping oil. Its powers are to generate electric power in Guam, not to transship fuel to other islands or to sell fuel in the market. GPA’s claim that it will not be involved in active transshipment of LNG outside with Guam is again directly contrary to the language in its proposed “study.” GPA is directly involved in transshipment of “regional LNG” and “for a negotiated franchise fee.” In 2013, GPA raised the concern that GPA customers would be paying for virtually all the infrastructure capable of supporting transshipment and the ancillary markets.

There must be a reason why GPA is focusing on transshipment to other islands, sales to third parties in the market, and creation of an LNG business. Could it be

that supply of LNG to Ukudu, and possibly other GPA plants, would not alone create a large enough volume of LNG to justify the LNG infrastructure?

There must be careful legal consideration of whether the powers claimed by GPA are within the scope of its governing law.

6. Even were the PUC to approve a Phase I study, it should require GPA to substantially revise Phase I of the LNG “Pre-Development Study”.

Instead of the focus in Phase I upon determining how to implement the LNG infrastructure, and selecting the specific methods by which to proceed, the Consultant should develop cost estimates, a cost-benefit analysis, and a determination of ratepayer impact so that the PUC can decide whether GPA should proceed with the LNG infrastructure project. Before this matter proceeds ahead, a convincing rationale must be provided to the PUC as to why this project should be undertaken.

There are several significant considerations. Where will the supply come from and what is the cost? What volume of LNG will GPA need? If LNG is only needed for the Ukudu Plant, and a few other of its plants, the volume may not justify the extremely expensive infrastructure. Considerations concerning other “ancillary markets” are arguably extraneous, i.e., the transshipment market, selling LNG to third parties, capturing the local fuel market etc. GPA’s mission is the functioning of the Guam island wide power system, not the development of an LNG business in Guam and the Micronesian islands. Is the LNG infrastructure really needed? Perhaps Guam is too small a market to justify extensive expenditures for LNG infrastructure.

Reliance upon LNG and development of an extensive infrastructure may be inconsistent with the statutory mandate for GPA to convert to renewable energy. Pursuant to 12 GCA § 8311. Renewable Portfolio Standards, GPA is required to establish a preliminary renewables portfolio standard goal of fifty percent (50%) of its net electricity sales by December 31, 2035 and one hundred percent (100%) of its net electricity sales by December 31, 2045. For these standards to be met, the reliance upon fuel oil, including LNG, must be reduced considerably. Should GPA be building LNG infrastructure when conversion to renewable energy is mandated? Stanley estimates that LNG cannot be delivered to the Ukudu plant, at the earliest, until 2028. That is only seven years before the 50% renewable goal in 2035, and 17 years until the 100% renewable goal in 2045.

As the sales of renewable energy in the power system grow, LNG will become less and less needed. Renewable energy will replace LNG. If the 2045 goal of 100% is met, the LNG infrastructure will no longer be needed and will potentially become a stranded asset. The LNG terminal and gasification facility will become useless relics. There may not even be a twenty-five-year LNG fuel supply contract period in which to recover any savings.

These issues should all be considered and addressed in a Phase I study.

Not proceeding with the project must be an option considered. This option should be fully analyzed in a Phase I study. The focus should be on cost, not only functional design and site selection. The consultant will need to consider some of the tasks indicated such as LNG demand, sourcing and shipment options.

In Phase I, the Consultant should not focus on a project execution plan and work breakdown structure development. These can come later after the PUC has decided whether to proceed with the LNG infrastructure project. The Consultant should not start with the presumption that the LNG infrastructure project has already been approved. The Consultant should consider LNG terminal options and technical and economic analysis for the different options, but not necessarily “focus on the preferred option.” It is agreed that the Consultant, whether Stanley, the PUC Consultant or an independent third party, should perform a cost-benefit analysis as part of the Phase I of the LNG study.³⁶

RECOMMENDATION

For the reasons stated in this Report, the Administrative Law Judge [“ALJ”] recommends that the PUC deny GPA’s Petition at the present time, without prejudice. GPA has not provided sufficient justification to proceed ahead with the Stanley LNG contract. No plan should proceed ahead until the PUC determines that it is “economically viable.” For the reasons stated herein, the Stanley study “Phase 1” should not be approved at the present time.

The PUC should defer consideration of GPA’s Petition and the “LNG Pre-Development Study”. The PUC should first retain its own Consultant. The PUC Consultant can advise the PUC as to how to proceed.

Before the PUC takes any action in this matter, there must be a study/presentation to the PUC that justifies proceeding ahead with the implementation and construction of the LNG infrastructure. Such should include cost estimates, cost-benefit analysis,

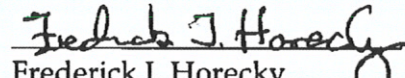
³⁶ See GPA Response to Request for Information No. 13.

justifications, and consideration of the questions raised herein, as well as any other issues raised by PUC's Consultant. The PUC Consultant can advise the PUC whether it, Stanley Consultants, or an independent third-party Consultant should be the appropriate party to conduct the study/presentation.

The study/presentation should also address the option of not proceeding ahead with implementation of the LNG infrastructure.

A Proposed Order is submitted herewith for the consideration of the Commissioners.

Dated this 26th day of June, 2023.


Frederick J. Horecky
Chief Administrative Law Judge



BEFORE THE GUAM PUBLIC UTILITIES COMMISSION

IN THE MATTER OF:) **GPA Docket 13-02**
GPA INTEGRATED RESOURCE PLAN) **ORDER**
)

INTRODUCTION

On February 22, 2013, the Guam Power Authority (GPA) filed its Petition for Review and Approval of the GPA 2013 Integrated Resource Plan (IRP). The plan was approved by the Consolidated Commission on Utilities (CCU) on December 12, 2012, in Resolution No. 2012-79. In accordance with P.L. 29-62, the objectives of the IRP are primarily to identify the timing, size, and technology of future power generating units, and to address issues such as fuel diversification and the renewable portfolio standards.

BACKGROUND

GPA develops its IRP every five years. Its previous IRP was filed on June 14, 2008 in Docket 08-06. The objectives recommended in the 2008 IRP were to identify a fuel diversity program that was consistent with reliability, dispatchability, and economic risk to consumers to be implemented at the earliest date possible; mitigate both, the high costs and volatility due to GPA's dependence on fuel oil; lessen this dependence by increasing fuel diversification; and providing customers with a road map that demonstrates how GPA will move from its current situation of being fully dependent on fuel oil to a more fuel diversified and efficient generation resource base.

On December 15, 2008, the PUC's consultant, Georgetown Consulting Group¹, entered into a Memorandum of Understanding (MOU) with GPA regarding Integrated Resource Implementation Planning Protocols for the Guam Power Authority to provide implementation oversight in order to ensure timely implementation of the fuel diversity objectives included in the IRP². On December 29, 2008, the PUC approved GPA's IRP subject to the protocols set forth in the MOU.

The U.S. Environmental Protection Agency (EPA) recently promulgated a number of clean air regulations, which will require costly compliance requirements for GPA. GPA and its consultants determined meeting the EPA requirements would cost approximately \$500M in environmental capital expenditures, including life extension costs for some of its units. In the alternative, GPA considered

¹ Georgetown Consulting Group was acting on behalf of the GPUC.

² The fuel diversity objectives included potential conversion of GPA's TEMMES generating units to liquefied natural gas (LNG) and to add a diversity of renewable resources to GPA's portfolio.

transitioning to alternative fuels, for which LNG was seen as the alternate fuel of choice. GPA filed its 2013 IRP on February 22, 2013 with conversion to LNG as its primary focus.

Lummus Consultants was asked by the GPUC to review the IRP. After engaging in discovery and collaborative discussions with GPA, Lummus issued its Letter Report and Appendix thereto on July 23, 2013.

DETERMINATIONS

In accordance with the Lummus Consultants' findings, the PUC makes the following determinations:

I. General Issues

- A. Economic evaluations conducted by GPA indicate LNG conversion will result in lower costs to rate payers than continued operation on RFO based on the fuel price projections developed in the LNG Study conducted by R. W. Beck in November 2011. However, converting the bulk of GPA generation units to LNG does not necessarily meet its objective of having increased fuel diversity.^{3 4}
- B. GPA should proceed with the recommendations in the IRP; however the conversion to LNG requires a cautious approach, with multiple check-points along the project development path. Also, this path should address diversification of fuel supply to reduce risks of disruption or price spikes to customers. The decision criteria used in the implementation plan should more directly address how diversity will be achieved prior to moving along the recommended path in this IRP.
- C. GPA's IRP does not provide detailed information concerning how the required infrastructure changes and other costs associated with a conversion to LNG will be funded, or what the rate impact of such a plan will be upon ratepayers. The PUC cannot give unqualified approval to a plan without fully understanding how the plan will be funded and how it will impact ratepayers.
- D. R.W. Beck's LNG study was admittedly a preliminary feasibility study. A logical next step is the development of a detailed LNG Project Implementation Plan. This would include a delineation of each of the key steps necessary to move toward a final decision relative to GPA's resource future with a detailed implementation schedule that defines durations and interfaces of key project activities (e.g. permitting, engineering to support permitting, Front End Engineering Design (FEED) studies, equipment procurement, project construction, start-up activities, etc.). The plan would provide projections of project expenditures consistent with the project schedule.
- E. The LNG Project Implementation Plan would identify key decision-making milestones and expected expenditures to reach these milestones. One of the initial tasks is to further investigate the feasibility and project economics of using a lower design volume of LNG, for

³In workpapers submitted by GPA, for the top LNG alternative, by 2040 over 98% of the Authority's thermal input is projected to be LNG.

⁴Public Law 29-62 requires GPA to establish preliminary renewable energy portfolio standards of five percent of its net electricity sales by December 31, 2015 and increasing by various increments over a 20-year period to 25 percent of its net electricity sales by December 31, 3035.

example sufficient to replace the slow speed diesels and to supply a new NGCC plant. These results could be compared with the concept of complete conversion of the GPA system as currently planned.

- F. As the whole LNG transition plan for Guam hinges on the availability and delivered pricing of LNG to the Island, the most important issue for justifying a “go forward” decision is the sourcing and pricing of LNG delivered to Guam. It would be beneficial to identify specific potential suppliers of LNG to Guam and conduct discussions with such suppliers including preliminary indicative price discussions based on preliminary project specifications. The R. W. Beck report is approaching two years old and although it looked in general at the LNG market in that area, it doesn’t appear to include communication with specific LNG suppliers and discussions regarding preliminary indicative price offerings specific to Guam.
- G. Based on review and discussion with GPA, it is apparent that little analytical work was performed on assessing alternative low sulfur fuels other than LNG. Investigation of the availability, delivered price forecasts, and required plant modifications for use of methanol, dimethyl ether (DME) at GPA generating units would serve as useful decision criteria to assess the attractiveness of delivering LNG to the island.
- H. The IRP does not address system and plant reliability issues. The focus appears to be solely upon generation and fuel source, without discussion of the transmission and distribution system. Recent outages have raised issues concerning the efficiency and reliability of the plants/system. Such reliability concerns could become even more significant in a period of system transformation to a new fuel source such as LNG.

II. Environmental Issues

- A. The United States Environmental Protection Agency (USEPA) has promulgated regulations since the last IRP filed by GPA, which provide added incentives for certain GPA generating units to convert from residual fuel oil (RFO) to lower sulfur fuels such as liquefied natural gas (LNG).
- B. The USEPA’s Reciprocating Internal Combustion Engine (RICE) Maximum Achievable Control Technology (MACT) standards have near-term impacts on GPA’s peaking diesel units as well as the base-load slow speed diesels. The impact of the RICE MACT standards on the peaking diesel units does not have a material impact on the IRP results and the PUC has issued an Order authorizing the procurement of equipment for the peaking diesel units for compliance with the RICE MACT standards. GPA obtained a one-year compliance extension from the USEPA until May 3, 2014 for the peaking diesel units.
- C. The RICE MACT standards have a significant impact on the future operations of the base-load slow speed diesels. Compliance with these standards using RFO will require complex, high capital cost air quality control system (AQCS) retrofits or switching from RFO to very low sulfur fuels (e.g. low sulfur diesel or LNG) plus AQCS retrofits with much lower capital costs. GPA is seeking an extension of the RICE MACT compliance deadline from USEPA for the slow speed diesels to coincide with LNG conversion of these units.
- D. The USEPA Mercury and Air Toxics Standards (MATS) affect the base-load steam boilers at Cabras Units 1&2 and Tanguisson Units 1&2 and have a compliance deadline of April 16, 2015.

Compliance deadlines for MATS may be extended by one to two years with proper agency approvals. Tanguisson Units 1&2 can avoid MATS requirements by derating the units from 26.5 to 25 MW. It is possible Cabras Units 1&2 could be required to retrofit electrostatic precipitators (ESPs) at an estimated cost of \$34M. GPA is evaluating stack test results to better understand the need for ESPs at Cabras Units 1&2.

- E. There are other USEPA regulations, such as the recently promulgated 1-hour SO₂ National Ambient Air Quality Standard (NAAQS), which could require additional AQCS retrofits at Cabras Units 1&2 and Tanguisson Units 1&2 in the future, if Guam or portions of Guam are determined to be "non-attainment" with the 1-hour SO₂ NAAQS.

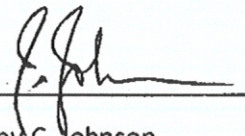
ORDERING PROVISIONS

The PUC conditionally approves GPA's 2013 Integrated Resource Plan, subject to the following:

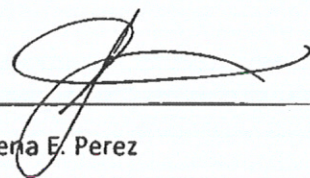
1. Within 120 days of this Order or sooner, GPA shall prepare and submit a detailed Resource Implementation Plan to the PUC for approval. This Plan shall identify the acquisition strategy GPA intends to utilize to bring LNG resources to Guam, including: a detailed implementation schedule; projected project expenditures consistent with the project schedule; identification of key decision-making milestones, criteria, and expenditures to reach those milestones; and identification of the expected schedule milestones for establishing contracts for the LNG supply. The Resource Implementation Plan should also address appropriate business models for adoption of LNG and other resources in the future.
2. GPA shall continue negotiations with the USEPA related to compliance with the RICE MACT standards for the slow speed diesels.
3. GPA shall continue with the recommendations of the IRP, with additional investigations performed in parallel as suggested in the Lummus Letter Report, including:
4. Further investigation of renewable fuels
5. Further investigation of alternative low sulfur fuels.
6. Early identification and discussions with potential suppliers of LNG to Guam including expressions of interest in serving this size market.
7. In parallel, GPA will continue to investigate the economics of diversification of fuels and a project plan for this path will be included in the Resource Implementation described in 1 above. This should include investigation of lower sulfur fuel, renewables including battery storage technology, and identification of the preferred level of diversification for Guam including the economic impact.
8. GPA's efforts on these activities will be monitored by PUC, with the assistance of Lummus Consultants, as it moves forward. The GPUC will consider the inclusion of reasonable costs associated with a well thought out Resource Implementation Plan, either in the LEAC or a budgeted item in the FY2014 rate proceeding, after review.

9. In proceeding ahead with IRP and the activities outlined in this Order, GPA shall seek review by the PUC of all matters for which prior PUC review is required under the Contract Review Protocol.
10. GPA will investigate as part of the next steps how to enhance system reliability in order to encourage inclusion of renewable technologies and to enhance service to customers and will submit reports to the GPUC semiannually on its progress.
11. GPA is ordered to pay the Commission's regulatory fees and expenses, including, without limitation, consulting and counsel fees and the fees and expenses of conducting the hearing proceedings. Assessment of the PUC's regulatory fees and expenses is authorized pursuant to 12 GCA §12002(b) and 12024(b), and Rule 40 of the Rules of Practice and Procedure before the Public Utilities Commission.

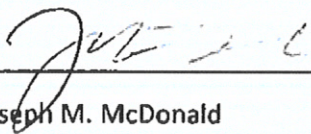
Dated this 30th day of July, 2013.



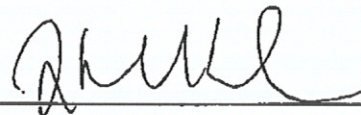
Jeffrey C. Johnson
Chairman



Rowena E. Perez
Commissioner



Joseph M. McDonald
Commissioner



Peter Montinola
Commissioner

Michael A. Pangelinan
Commissioner

Proposed Rate Schedule
GPA EPCM Contract March to September 2022 extension
Stanley Consultants, Inc.
December 1st, 2022 through September 30th, 2023

	Hourly Rate
Home Office Professional Stanley	
Executive Sponsor/VP	\$ 335.83
Senior Project Manager 3	\$ 310.82
Senior Project Manager 2	\$ 295.20
Sr Project Manager 1	\$ 283.73
Principal Engineer 3	\$ 283.73
Principal Engineer 2	\$ 267.07
Principal Engineer 1	\$ 257.69
Senior Engineer/Architect/Scientist/Planner 3	\$ 242.06
Senior Engineer/Architect/Scientist/Planner 2	\$ 228.86
Senior Engineer/Architect/Scientist/Planner 1	\$ 216.02
Engineer/Architect/Scientist/Planner 2	\$ 202.47
Engineer/Architect/Scientist/Planner 1	\$ 187.54
Engineer/ Senior Environmental Scientist	\$ 174.69
Sr. Project Controls Specialist/Junior Engineer	\$ 159.76
Engineer in Training/Project Controls Specialist/ Sr Consultant	\$ 145.87
Environmental Scientist I	\$ 132.32
Administrative Assistant Senior	\$ 119.12
Administrative Assistant	\$ 72.93
Field Professional Stanley	
Senior Project Manager on site	\$ 327.38
K&M Advisors	
Senior Commercial IPP Expert	\$ 368.73
Senior IPP Technical Expert	\$ 331.85
Mid Level IPP Commercial Expert	\$ 206.93
Mid Level IPP Technical Expert	\$ 173.89
Junior Level IPP Commercial Expert	\$ 133.32
Administrative Assistant	\$ 81.15
LNG Project Manager	\$ 330.00
LNG Task Lead	\$ 360.00
LNG Commercial Expert	\$ 380.00
Senior Technical Expert	\$ 220.00
Senior Financial Analyst	\$ 220.00
Junior Technical Specialist	\$ 150.00
Financial Analyst	\$ 150.00
Senior Environmental Expert	\$ 310.00
Administrative Assistant	\$ 115.00
COWI (Sub to K&M)	
Project Director / Technical Advisor	\$ 315.00
Project Manager	\$ 242.00
Project Engineer / Cost Estimator	\$ 242.00
Senior Coastal Engineer	\$ 242.00
Coastal Engineer I	\$ 194.00
Structural Engineer	\$ 194.00
Coastal Engineer II	\$ 152.00
CAD Designer	\$ 147.00
Project Coordinator	\$ 137.00
CHIV (Sub to K&M)	
Project Manager	\$ 337.00
Regulatory Engineer	\$ 237.00
Process Engineer	\$ 313.00
Estimator	\$ 200.00
Civil Engineer	\$ 261.00
Mechanical Engineer	\$ 261.00
E,I&C Engineer	\$ 261.00
Construction	\$ 261.00
Drafting	\$ 124.00
EA Engineering Science and Technology	
Senior Level Scientist	\$ 224.30
Senior Project Manager	\$ 215.46
Project Manager Junior	\$ 155.60
Scientist Mid Level	\$ 143.10
Scientist Junior Level	\$ 109.63

*Labor Rates Subject to Change October 1st, 2023.

GPA ENGINEERING, PROCUREMENT, AND CONSTRUCTION MANAGEMENT CONTRACT (GPA-RFP-21-010)
FEE BREAKDOWN

DATE: 9/22/2022

		# of Months	10	12	12	2	
EPCM			Dec 2022 - Sept 2023	Oct 2023 - Sept 2024	Oct 2024 - Sept 2025	Oct 2025 - Nov 2025	Totals
		GPA FY					
	WP 11.01	Program Management	\$ 135,159	\$ 162,191	\$ 162,191	\$ 156,826	\$ 616,367
	WP 11.02	Assistant Proj Manager	\$ 282,922	\$ 339,508	\$ 339,508	\$ 56,584	\$ 1,018,522
	WP 11.03	Project Controls/Scheduling	\$ 100,573	\$ 120,687	\$ 120,687	\$ 20,115	\$ 362,062
	WP 11.04	Document Control	\$ 68,609	\$ 82,331	\$ 82,331	\$ 13,721	\$ 246,992
	WP 12.01	K&M Advisors	\$ 82,500	\$ 99,000	\$ 41,250		\$ 222,750
	WP 12.02	Pond & Co	\$ 27,425	\$ 33,075			\$ 60,500
	WP 12.03	EA Engineering	\$ 111,822	\$ 134,829	\$ 134,499	\$ -	\$ 381,150
	WP 12.04	EPS	\$ -	\$ -	\$ 174,809	\$ -	\$ 174,809
	WP 21.00	Technical Reviews	\$ 174,299	\$ 209,158	\$ 209,158	\$ 34,861	\$ 627,476
	WP 52.01	Onsite PM Presence	\$ 648,974	\$ 778,768	\$ 778,768	\$ -	\$ 2,206,510
WP 52.XX	Technical Onsite Support	\$ 9,346	\$ 65,425	\$ 9,346	\$ -	\$ 84,117	
EXPN	Expenses	\$ 152,692	\$ 225,338	\$ 181,780	\$ 29,086	\$ 588,896	
EXTX	GRT Tax @ 5.263%	\$ 94,435	\$ 118,434	\$ 117,593	\$ 16,378	\$ 346,840	
		Sub-total	\$ 1,888,756	\$ 2,368,744	\$ 2,351,920	\$ 327,571	\$ 6,936,991
LNG							
	WP 3.2	Phase 1 Pre-Development	\$ 1,506,956	\$ 301,386			\$ 1,808,342
	WP 3.3	Phase 2 LNG Infrastructure Procurement		\$ 1,161,303	\$ 512,948	\$ 56,139	\$ 1,730,390
	WP 3.4	Phase 3 LNG Infrastructure Implementation			\$ 325,314	\$ 65,061	\$ 390,375
	WP 3.5	Phase 4 LNG/CNG Transhipment		\$ 210,419	\$ 42,085		\$ 252,504
	WP 3.6	Training Program		\$ 241,483	\$ 48,296		\$ 289,779
	EXTX	GRT Tax @ 5.263%	\$ 79,311	\$ 100,765	\$ 48,874	\$ 6,379	\$ 235,329
		Sub-total	\$ 1,586,267	\$ 2,015,356	\$ 977,517	\$ 127,579	\$ 4,706,719
		Total	\$ 3,475,023	\$ 4,384,100	\$ 3,329,437	\$ 455,150	\$ 11,643,710

Phase 1 Budget							
	No Markup on Subs	With 5% Markup on Subs	Hours	Remuneration	Trips	Cost	Total
K&M							
LNG Project Manager	\$330.00	\$330.00	600	\$198,000	6		
LNG Task Lead	\$360.00	\$360.00	424	\$152,640	4		
LNG Commercial Expert	\$380.00	\$380.00	376	\$142,880	3		
Senior Technical Expert	\$220.00	\$220.00	400	\$88,000			
Senior Financial Analyst	\$220.00	\$220.00	584	\$128,480			
Junior Technical Specialist	\$155.00	\$155.00	40	\$6,200			
Financial Analyst	\$155.00	\$155.00	40	\$6,200			
Senior Environmental Expert	\$310.00	\$310.00	120	\$37,200	1		
Administrative Assistant	\$115.00	\$115.00	136	\$15,840			
Subtotal			2,720	\$775,240	14	\$73,150	\$848,390
COWI							
Project Director / Technical Advisor	\$ 300	\$ 315	402	\$126,630	4		
Project Manager	\$ 230	\$ 242	517	\$124,856	4		
Project Engineer / Cost Estimator	\$ 230	\$ 242	384	\$92,736			
Senior Coastal Engineer	\$ 230	\$ 242	134	\$32,361			
Coastal Engineer I	\$ 185	\$ 194	116	\$22,533			
Structural Engineer	\$ 185	\$ 194	126	\$24,476			
Coastal Engineer II	\$ 145	\$ 152	40	\$6,090			
CAD Designer	\$ 140	\$ 147	144	\$21,168			
Project Coordinator	\$ 130	\$ 137	90	\$12,285			
Subtotal			1,953	\$463,134	8	\$56,000	\$519,134
CH2M							
Project Manager	\$ 321	\$ 337	200	\$67,410	1		
Regulatory Engineer	\$ 228	\$ 237	224	\$53,155	1		
Process Engineer	\$ 298	\$ 313	64	\$20,026			
Estimator	\$ 190	\$ 200	200	\$39,900			
Civil Engineer	\$ 249	\$ 261	48	\$12,550			
Mechanical Engineer	\$ 249	\$ 261	88	\$23,008			
E.I&C Engineer	\$ 249	\$ 261	80	\$20,916			
Construction	\$ 249	\$ 261	92	\$24,053			
Drafting	\$ 118	\$ 124	40	\$4,956			
Subtotal			1,036	\$265,973	2	10450	278423.4
Total			5,709	\$1,504,347	24	\$139,600	\$1,643,947
Markup on Subs Rates	5%						
Annual Increase	4%						